## SATELLITE – BASED AIR QUALITY OBSERVING SYSTEMS[1]

| Instrument | Satellite Platform[3] | Lead Federal Agency | Initiated | Measurement Parameters | Orbit & Horizontal Resolution | Location of Information and/or Data |
|---|---|---|---|---|---|---|
| GOES Imager (Geostationary Operational Environmental Satellites) | GOES-10 GOES-12 | NOAA | 1994 | Fire products for WF_ABBA (imagery) and GASP (aerosol optical depth) | Geostationary | http://www.nesdis.noaa.gov/ |
| GOES Sounder (Geostationary Operational Environmental Satellites) | GOES-10 GOES-12 | NOAA | 1994 | Total column O3 | Geostationary | http://cimss.ssec.wisc.edu/goes/goesmain.html#sndrinfo |
| SBUV/2 (Solar Backscattered Ultraviolet Radiomenter Model 2) | NOAA-16 NOAA-17[2] | NOAA | 2000 | Total and profile O3 from surface to top of atmosphere in ~5 km thick Umkehr layers | Polar | http://www2.ncdc.noaa.gov/docs/podug/html/c4/sec4-4.htm |
| AVHRR (Advanced Very High Resolution Radiometer) | NOAA-15 NOAA-16 NOAA-17[2] | NOAA | 1998 | Aerosol optical depth, particle size information and vegetation/drought index products related to air qulaity through fires | Polar 4km | http://noaasis.noaa.gov/NOAASIS/ml/avhrr.html |
| OLS (Operational Linescan System) | DMSP satellites | DOD | 1962? | Identify fires and smoke plumes | Polar Imagery only | http://www.af.mil/factsheets/factsheet.asp?fsID=94 |
| TOMS (Total Ozone Mpaaing Spectrometer) | Nimbus 7 Meteor 3 Earth Probe | NASA | 1978 1991 1996 | Total O3, aerosol index | Polar ~100km | http://toms.gsfc.nasa.gov/fltmodel/spacecr.html |
| MODIS (Moderate Resolution Imaging Spectroradiometer) | EOS Terra EOS Aqua | NASA | 1999 2002 | Aerosol optical depth, particle size information, fine particle fraction, and forest fires | Polar 1km | http://modarch.gsfc.nasa.gov/index.php |
| AIRS Atmospheric Infrared Sounder | EOS Aqua | NASA | 2002 | Total column ozone, surface temperature, temperature and moisture vertical profiles, (plus under development are CO and CO2 total column, O3 vertical distribution, and CH4 distribution) | Polar 50km | http://www-airs.jpl.nasa.gov/features/climate_change/intro.html |
| MOPITT (Measurement of Pollution in the Troposphere) | EOS Terra | NASA | 1999 | CO, CH4 | Polar 22 x 22 $km^2$ | http://www.eos.ucar.edu/mopitt/ |
| MISR (Multi-angle Imaging SpectroRadiomenter) | EOS Terra | NASA | 1999 | Aerosol properties and plume height information near the vicinity of fires | Polar ~1km | http://eos.gsfc.nasa.gov/projects.html |
| OMI (Ozone Monitoring Instrument) | EOS Aura | NASA | 2004 | Tropospheric columns for O3, SO2, HCHO, NO2 and aerosol | Polar 12 x 24 $km^2$ | http://eos.gsfc.nasa.gov/projects.html |
| TES (Total Emission Spectrometer) | EOS Aura | NASA | 2004 | Tropospheric columns for O3, NOy, CO, SO2, CH4 | Polar 26 x 42 $km^2$ | http://eos.gsfc.nasa.gov/projects.html |
| CALIPSO (Cloud-Aerosol Lidar & Infrared Pathfinder Satellite Observations) | CALIPSO | NASA | 2005 | Aerosol optical depth, backscatter, extinction | Polar 0.3 x 0.3 $km^2$ | http://www-calipso.larc.nasa.gov/about/ |
| OMPS (Ozone Mapping and Profiling Suite) | NPOESS - Preparatory Project | NOAA | 2006 | total column and vertical profile ozone data, | Polar | http://www.ipo.noaa.gov/Projects/npp.html |
| VIIRS (Visible Infrared Imaging Radiometer Suite) | NPOESS - Preparatory Project | NOAA | 2006 | Aerosol optical depth | Polar | http://www.ipo.noaa.gov/Projects/npp.html |
| Orbiting Carbon Observatory | OCO | NASA | 2008 | CO2 | Polar | http://oco.jpl.nasa.gov/ |

Footnotes:

1. Non-U.S. satellite systems are not included in table at this time.
2. As of 3/15/06 the operational satellite platforms may need to include NOAA-18.
3. CALIPSO -- Cloud-Aerosol Lidar & Infrared Pathfinder Satellite Observations

DMSP -- Defense Meteorological Satellite Program
EOS -- Earth Observing System
GOES -- Geostationary Operational Environmental Satellites
NOAA -- National Oceanic and Atmospheric Administration
NPOESS -- National Polar-orbiting Operational Environmental Satellite System
OCO -- Orbiting Carbon Observatory